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PHYSIOLOGICAL BREAD.



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A Contribution to the Simplification of Therapeutics.

TRANSLATED FROM THE GERMAN OF

JULIUS HENSEL,

Physiological Chemist.

"Tear off the ancient mantle of hoary prejudice and startle the listless wanderers from their dream."—E. L.

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Physiological Bread.

What is PHYSIOLOGICAL? "Physiological" means "Corresponding with natural, healthy growth." By Physiology is meant, in general, a knowledge of the construction of the body, its functions and capabilities when in a healthy state, as also of the physical and chemical conditions requisite therefor.

Every physician ought really to be a physiologist, for the whole essence of the healing art rests upon applied physiology; nevertheless I have had to notice during my own medical studies that only very few students endeavor to acquire in a sufficient measure the chemical knowledges which are indispensable for the comprehension of all vital functions. Thence it is that the healing art, instead of endeavoring mainly to secure a judicious nutrition in order to produce healthy blood, in its perplexity, is continually reaching out for new artificial remedies, of which one continually supplants the other. *Antipyrin*, *salipyrin*, *salol*, *salophen*, *phenacetin*, *resorcin*, *resorbin*, *nervin*, *antinervin*, *migrænin*, *sulfonal*, *somnal* are the names of various chemical artificial products by which it is intended to cure diseased humanity. I am convinced that whatever physicians might be consulted as to the exact constituents of the artificial products enumerated, ninety-nine out of one hundred could not stand such an examination. How can practitioners of the healing art have confidence in the effects of substances concerning the chemical constituents of which they are in ignorance? If anyone thirty years ago had dared to use such names he would have been put into the pillory as a mystery-monger and swindler. But how the times have changed! A chemical laboratory which nowadays does not mix up a new antipyrene is no more regarded as full and flourishing. But it has at least been customary hitherto to honestly state the constituents. But "Urecedin" (the destroyer of uric acid) has emancipated itself from this usage, as its composer has cautiously *forgotten to state its ingredients*. *Virtus post nummos* (Money first, honor afterwards!)

I think the time has come to ask the question: How is it

that the Germans, formerly as strong as bears, have become so weak; that they must snatch at a hundred artificial supports which are praised up by the chemical laboratories, and which yet have no other effect but to cause the visits of the physician to become constant in his house.

May I be allowed to make a contribution to the explanation of this unnatural state?

The Sacred Scriptures say: "Of dust thou art, and unto dust shalt thou return." Is this correct? It is indeed. Nevertheless man consists not only of earth, but at the same time of earth, water and air. The earthy particles have the function of energetically keeping together the watery and gaseous (aerial) constituents of our bodily substance. This may best be seen from the limestone. Although heavy in weight it consists almost as to one-half of it of air or of gas; namely, of carbonic acid gas. This aerial constituent may be seen as it takes its departure, just as in effervescent powders, by pouring vinegar on it. (Chalk does the same, and is, indeed, chemically the same as limestone.) Limestone may, however, also be deprived of its gaseous constituent by burning it in a kiln. The limestone which remains over thereby becomes only so much heavier, denser and firmer. In a similar manner, when human bodies are cremated all the gaseous constituents of the body pass into the air, and the body of an adult person leaves only six pounds of ashes on the average. All the rest was composed of combustible substances which in gaseous form, as carbonic acid, aqueous vapor and nitrogen, passed into the general aerial ocean.

As to the remaining "ashy residuum," or the "earthy parts," they consist not merely of the lime of the bones, but they also contain the salty and earthy constituents peculiar to the muscles, the tendons, the blood and the nervous substance. The healthy flesh of the muscles contains; *e. g.*, much phosphate of potash; the bones, instead of this, mostly phosphate of lime together with phosphate of magnesia and fluoride of calcium, while the nerves contain phosphate of ammonia. The healthy blood out of which the *foetus* produces *all* its organs in the womb contains carbonates, silicates, hydrofluorides, muriates, sulphates and phosphates of lime, of soda, of potassa, of magnesia, of oxide, of iron and of manganese; *i. e.*, all those twelve ashy constituents are there side by side which singly are needed for the muscles, the tendons, the nerves and the bones.

From this it may easily be seen that if these earthy substances which gave to our whole body firmness, power of resistance and cohesion are in part lacking in our blood then the organs, which are continually consumed by respiration and which are subject to gradual removal, mutation of substance and new formation (for what at the age of twenty remains of the bodily substance of the original child?), cannot again come to a normal development. Thence we have such phenomena as caries of the bones, scrofula, suppuration of the lymphatic glands, curvature of the spine and of the sternum, bandy legs, blear-eyes, short-sightedness, cutaneous eruptions, smallpox, scarlatina, diphtheria, consumption, etc. Most of these affections come from weak lymph and blood-serum owing to injudicious nutrition.

As to nutrition in general, it must be considered that the human body does not remain the same even for twenty-four hours, though it may externally appear so. In reality we breathe away unceasingly every day a certain part of our blood and of the rest of our bodily substance, whereby slowly the same gases pass off as in cremation; *i. e.*, carbonic acid, watery vapor and nitrogen gas; and just as in cremation so also in respiration the like earthy parts remain over, but these are not retained in the body but dissolved in serum; they are continually removed out of the blood current by the activity of the kidneys as fast as used up, and thus they are completely removed from the organism.

Under these circumstances it is manifest that there is an urgent requirement to supply again, by judicious nutrition, all that during the course of twelve hours has been respired away, and what has passed away through the kidneys. Otherwise our organs and their functions must become weak and debilitated. And this is just the point as to which we are ill off in our century.

Originally this was otherwise. For all the above-named earthy elements were, without any exception, formerly contained in the grain from which our bread was made. But this has not been the case for some time, and we have been worse off since our bread is baked out of the finest flour. In this the bran, rich in earthy constituents, is almost wholly lacking. But even supposing the case that we consumed all the bran which we now feed to our oxen, hogs and geese, as is indeed done by the vegetarians in the bran-bread, we yet do not get what we need for the following reason :

The cereals of our ancestors received their earthy constituents from the soil of that time which consisted of material washed down from the mountains, and had thus been produced from the primitive rocks by the corroding rainwater. In such primitive rocks (granite, porphyry, gneiss, argillaceous slate, etc.) all the earthy particles are actually collected which give cohesion to the bodies of plants and animals. But now it is with the soil as with men, for with every annual harvest we have carried away the earthy material from our fields out of which, together with water and atmospheric air, under the influence of the heat of the sun, the produce of the field was formed. More and more, after so many years of cultivation of the soil, the elements of the primitive mountains, which had been deprived of their best substance, leave behind the husks, the strengthless remnants in the form of silica and clay, the latter of which takes no part in the production of vegetation. Thus the valuable elements requisite for the production of healthy, nutritive plants have been even more completely used up, for the crops harvested from the fields are taken to the cities and there consumed. The ash constituents of the respired blood are discharged with the urine into the rivers and by these into the ocean, where they can be of no use to our fields.

This explains why our soil, after so many years of plowing and harvesting, at last refused its yield. But about this time it was discovered that the excrements of men and animals, when brought upon the fields, produced renewed growth. These excrements are nothing else than remnants of the food consumed which were not made use of; *i. e.*, not transformed into new lymph and blood, and not being made use of they were chemically decomposed and decayed in the alimentary canal and were excreted as superfluous and useless. Ever since "stable manure" has been the cry, and from thence our miseries commenced, for stable manure containing considerable quantities of ammoniacal substances is absolutely unable to produce wholesome crops for men and animals, because that which gives a vigorous consistency to our limbs and organs consists of the firm earthy parts and not of ammonia vapor.

Our corporeal substance, indeed, also contains ammonia in combination, and this in rich abundance; but for that very reason every superfluous increase in this direction is a disadvantage to us. So much ammonia as is necessary, sufficient

and useful for the bodies of plants and animals is condensed by the green parts of the plants from the nitrogen and the watery vapor of the air into vegetable albumen. Now, when to this amount of ammonia, measured out so wisely to secure the mobility of our muscles, all the ammonia is added which had been already before consumed as vegetable or animal albumen and had been excreted as unnecessary, superfluous and harmful then the earthy particles of our body must suffer a comparative diminution. This is most plainly manifest in the growth of plants where the disproportion existing between the ammonia and the fixed alkalies and the alkaline earths shows in the *lodging of grain*; *i. e.*, the stalks of the grain have not the strength to resist the wind and rain, but lie on the ground as if mowed off. But not only the stalk but also the grain suffers, as it does not attain the original strength and the original nutritive value; for who would assert that such ammoniacal productions at the disposal of man or beast are what he needs in order to form strong, warm blood, firm bones, vigorous muscular flesh, elastic tendons, sound teeth and a fine growth of hair? The mothers of our ancestors have hardly had any need of false plaits and false teeth, while at this day mothers are rare who can display an abundance of their own hair and sound teeth. We can quote, also, in this sense, Goethe's words: "Woe to thee that thou art a grandson."

Thence it comes that even the bran-bread of this day on the average does not satisfy the requirement of a healthy article of food, although it contains as many ashy particles as are contained in the hull of the wheat-grains. The trouble is that these ashy parts are no more the same either in kind or in quantity as before.

A standing complaint with our millers is that many native cereals cannot be ground because they besmear the mill-stones and rollers. This is caused by the great quantity of vegetable albumen with its ammoniacal contents. In order to grind such grain the millers must mix it with foreign grain coming from countries the agriculture of which is not as old, and where, consequently, the soil still has its full strength. Such countries are Roumania, Hungary, Russia and California, which, however, are already swiftly progressing in our own fatal path.

The millers are joined in their complaints by the bakers and brewers. The brewers complain that the malt made of barley

raised with stable-manure spoils their beer, and the baker says: "You would not believe how much trouble I have in making good bread from the flour of to-day; it has no strength."

But the worst part is that such ammoniacal crops inflict great damage on the health of our cattle and thence also on that of our children. Can milk from diseased cows produce healthy blood, firm bones, normal flesh and good nerve-substance? It cannot do this, not even if it is boiled in the Soxhlet apparatus, for this does not communicate to it any firm, earthy particles. But if we get normal milk then we need no such apparatus. Bad, innutritious milk cannot be rendered to the least degree more nutritious by boiling in this apparatus.

The number of cases of anæmia, chlorosis, short-sightedness, curvature of the spine, scrofula, epilepsy, scarlatina, diphtheria, consumption and rheumatism are continually on the increase. To what will this yet lead?

So also cattle diseases are continually increasing. Whence originate anthrax, the French disease, glanders, erysipelas, the mouth and hoof-disease? They come from our compelling cattle to eat what has grown from their own dung. The dung was what was useless and unsuitable for working up into lymph and blood-serum, and which, therefore, was excreted. In this respect it is instructive to note that cows avoid grass in their pasture which grows where cow-dung is lying. No animals like their own dung, therefore as a rule horses are driven on the pastures where cows have been feeding, and only in the year following cows are again driven there. In agreement with this it is that when oxen or cows are driven on a pasture which has been manured with liquid manure they shake their heads (probably because they are repelled by the odor), leave the place and seek out those parts which have been manured with lime. No cattle voluntarily feed on their own dung and on what has grown from it.

This whole subject and the necessary remedy I have clearly expounded in my essay on "Bread from Stones."* There I stated: Crush fresh, primitive rocks and put them on the exhausted fields, then you will again harvest sound grain for your bread. A beginning has already been made in this direction, but when I consider that it is already nine years since I began to point out this necessity, and there are as yet

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only four or five factories for manure from stone-meal, fifty or more years may yet elapse before this becomes general and before all parts of the country will be benefited thereby. By that time many a child may yet die of diphtheria and scarlet fever and many girls and boys may yet needlessly perish of consumption.

Should I, then, after my fifteen years of study and experience, idly fold my hands and patiently wait until all farmers have adopted manuring with stone-meal in order to furnish healthy cereals, vegetables and fodder? Might I not, without waiting for the indolent masses, all by myself and independently, succeed in reaching my goal in a quicker way, so as to produce healthy food? And if there is such a way may not both ways be used? The one may then be quietly done without leaving the other undone. Now, with the help of God, I have found out a quicker way. The great end of securing wholesome nourishment may be reached directly and at once *by improving the flour from which the bread is baked*. This way is not, indeed, as desirable as if the soil produced the desired material, but so long as the latter is not universally the case we may well be contented, if what we need may in any way be effected, so that we may gain our health and retain it. To do this, I have hitherto followed the method of advising men to let all poisons and all substances foreign to our organism stay where they are, and instead of them use for our healing purposes merely those substances which the blood requires for its healthy state. Of what kind these substances are may be seen from the nature of the salts and earths which healthy blood, when burned, leaves behind as ashes. By fulfilling these conditions, and using the physiological salts and the physiological earths for the improvement of the blood in numerous morbid states the most surprising cures have been effected.

Now, when I moved from Berlin here to Silesia, in order to recover from my exhausting practice, letters from my patients followed me in such numbers that, with the utmost willingness, I could not master them.

In this trouble the bright thought struck me that the physiological salts and physiological earths, which could not well be prescribed together, could, nevertheless, be combined by mixing them with fine flour in the proportion in which they are needed for the healthy body, and then baking bread of it.

No man is apt to eat more bread than agrees with his digestive power; *i. e.*, he will only eat till he is sated. With this the measure most suitable for every one is most plainly fixed. More cannot be done by the most careful dosing.

This agrees most fully with the principle I have emphasized in all my writings, that *a last final curative course can only consist in creating new healthy blood by judicious nutrition.*

The mineral substances which the healthy blood needs to provide for the mutation of elements; *i. e.*, the renewal of all the organs, are the following:

Potassa,	-	-	-	-	-	105 parts.
Soda,	-	-	-	-	-	390 "
Lime,	-	-	-	-	-	583 "
Magnesia,	-	-	-	-	-	29 "
Oxide of Iron,	-	-	-	-	-	40 "
Oxide of Manganese,	-	-	-	-	-	2 "
Fluorine,	-	-	-	-	-	2 "
Phosphoric Acid,	-	-	-	-	-	70 "
Sulphuric Acid,	-	-	-	-	-	130 "
Muriatic Acid,	-	-	-	-	-	455 "
Silica,	-	-	-	-	-	780 "
Carbonic Acid,	-	-	-	-	-	390 "

Taking these proportions as a basis, I have provided a product which I call

"PHYSIOLOGICAL BREAD POWDER,"

and which, when used in the proportion of one-half ounce to one and one-half pounds of wheat flour with yeast, water and milk, furnishes a bread which possesses the properties of a perfect nutriment. To distinguish this bread from the common bread I call it "Physiological Bread." It might also, with all propriety, be called "Vegetarian Bread."

I would only add that this physiological powder may also be used together with eggs, butter, milk and sugar. This simply means that pastry may be made more wholesome, savory and nutritious by means of the addition of "Physiological Bread Powder," in the proportion of half an ounce to one and one-half pounds of material.

I would also especially remark that, for those of a stronger digestion, bread of rye-flour or bran-flour baked with leaven, may be improved in the same way by adding this powder. But weak and sick persons should first use the wheat-bread made

with yeast, for it is digestible even for the weakest stomachs.

I, of course, first supplied myself and family in this new and simplified manner with the mineral substances which improve the blood and preserve health, and in doing this I found :

1. That physiological bread tastes very much like rolls, but is more savory and does not dry out so easily. When kept in a cool pantry it tastes as well after three days as when freshly baked.

2. Such bread, either eaten with butter, or dry, with coffee, produces a comfortable feeling of satiety and an agreeable bodily warmth as a consequence of the orderly circulation of the blood. The body feels as if it were rejuvenated. *The bodily and the physical functions experience a sensible increase.* Energy, intelligence, acuteness of hearing and of vision are increased thereby. Weariness and cold are not felt as before. Instead of peevishness there is equanimity. It is with the nerves as with the whole man, if they receive what they desire they are contented.

3. After eating this bread hunger does not return so soon. The explanation of this is found in the fact that we eat about four times as much as would be necessary if the food consumed contained all the mineral constituents that the tissues consumed required for their renewal. As this is not the case in general, and as especially the proportion of sulphur in the articles of food is less than our organism requires, it follows that correspondingly large quantities of food must be consumed in order that even the supply of sulphur most urgently required for the blood may be extracted from the food. This is also true with respect to lime and iron. Sulphur, lime and iron always belong together in order to produce newly-formed blood corpuscles.

How great an advantage is there in such a rational food which satiates for quite awhile, especially in travelling on land and sea or on forced marches !

4. Physiological bread drives away headache and promotes regular evacuations; it also removes hemorrhoidal troubles by simply restoring the circulation to its normal state. It ought to be able to do this, as it supplies a complete medicine chest. Experience teaches that a heightened effect is obtained by the greatest obtainable degree of diminution of the particles. This condition is best fulfilled by combining the physiological bread powder with fifty times the quantity of wheat flour.

There is here a real "combination" not a mere "mixture," for the single constituents of the physiological bread powder enter into an organic combination with the gluten, which constitutes about one-eighth of the wheaten flour. Now, when we consider that in biochemistry only one *single* substance is applied separately, it may well be believed that if *all* the materials which enter into the composition of our bodies are used in the above-described minute subdivision daily that we possess in the physiological bread both nutriment and medicine. In satiating it cures hunger, and thus protects from emaciation; but also otherwise prevents and cures a host of disorders.

5. He who uses the physiological bread instead of other bread as a corrective of his remaining mode of nutrition need not to have any anxiety as to his diet, he need only regard the fundamental rule of avoiding every excess in his food. Nearly all abdominal disorders may be traced to overloading the bowels with superfluous food; in this case, as before mentioned, stagnation of blood is also involved. For the more the bowels are loaded down with blood the longer is the blood retained in the parietes of the bowels for the purpose of digestion, and then disturbances in the circulation are inevitable. In gastric troubles a corresponding fast is the most natural remedy. Instead of this, modern healing art has developed in the other direction and preaches: "Just eat heartily, so that you retain you strength." "But I *cannot*, I have not a trace of appetite." "But you *must*."

What did Pastor Kneipp tell Banker R., when he examined him as to his mode of living and heard what he ate for the first and second breakfast, for dinner, lunch and supper, in order to retain his strength? Pastor Kneipp answered very correctly when he said: "Well, do you know what you lack? *You need a second stomach to master all that.*"

EPILOGUE.

To make it manifest that it is the earthy or ashy particles which give form and consistency, not only to the human and animal bodies, but also to the plants and thence all vegetable substances, I shall now point out some examples.

On the Silesian soil, formed from the granite mountains rich in potassa, as also on the slope of the Teutonburg Forest (Biele-

feld), the best flax grows, furnishing the strongest, most durable linen, and in both places the cereals raised (I will only mention the pumpernickel of Westphalia) nourish a vigorous, persevering race of men. Returning to flax, even shirts manufactured from the best linen at last, through wear and tear, become rags; but when these rags are put into the stove and burned their ashes completely retain the form of the linen, even the single threads and the whole tissue may be recognized. And not only the rags, but even the paper made from them, when burned, retains its form and allows even the characters written with iron-ink to be distinctly visible while it is glowing in the fire.

Just as with linen and paper, so it is in general with all vegetable tissues; *e. g.*, dry leaves, straw and hay.

And as to man? He is like grass and hay. It has often been noticed that when the lid is taken from a coffin, several centuries old, the corpse will still show its natural form, but as soon as it is touched or otherwise shaken it collapses into a heap of dust. In such corpses the combustible substances have in the course of centuries slowly and gradually succumbed to the same process of transformation into air and gases which in cremation is accomplished in less than two hours. In such a slow removal of the gaseous parts, as it takes place without any blast of air, the earthy ash substances retain their natural position and imitate the human form just as the ashes of paper imitate the form of paper.

Now, if vegetable substances are more durable and retain their form longer in proportion as they show more ashy constituents, do we not already here see the application of the constitution of nutriments to the constitution of the human body? Let us see whether practice agrees with this theory:

Let us first compare apples with potatoes. How quickly an apple will rot, especially when a piece has been cut off! Quite different it is with the potato. The cut it receives from the hoe forms a crust, and a new skin forms over the wounded place. This is caused by the ashy parts, for while the apples contain only two grains of ashy constituents out of one thousand grains potatoes have twenty grains, thus ten times as many. Therefore, also, it is that apples do not keep near as long as potatoes, which last until there are new ones. And what power of production do we see in the potato rich in earthy constituents? Even while keeping potatoes in the cel-

lar, at times, within the skin of an old potatoe a smaller new potato grows, formed at the expense of the substance of the old potato. Then, when planted into the ground, the potato multiplies from spring to autumn in a tenfold ratio. Will anyone suppose that there is any other cause for the greater number of children found with the poor, who chiefly live on potatoes, than the productive power of the earthy elements? All so-called boy-springs (Reinerz, Franzensbad, Pyrmont, Schwalbach, Driburg) are rich in iron, lime and silica.

It is well known that diabetic patients should eat little bread. Why not? Just because our bread of to-day no longer contains those earthy constituents which, by means of sulphur, lime and iron (the nerve-quickeners oxygen-bearers), are able to form new blood-disks. *Physiological bread*, which contains all those earthy and salty constituents which are requisite for the healthy and vigorous constitution of blood, will not only *be allowed* but even *enjoined* upon them for food. From this they will see an even better result than from the almond-bread in Carlsbad, which also owes its efficiency to its large proportion of combinations of potash, lime and magnesia (almost five per cent.). Without this St. Marcus could not have lived for months on almonds merely, and yet have retained his health. Almond-bread (*marchpane*, *Marci-panis*,—the bread of Marcus) has great nutritive powers, owing to its earthy constituents. But little of it is needed to give a feeling of satiety. Thence comes the saying, “*Marchpane spoils the appetite.*” So it does, and in the best possible way; but this is our very purpose in eating, to remove our appetite by satisfying it, and with almonds this is attained by a very small quantity, since almonds leave an eight times larger quantity of ashes as fine flour, for this contains not five, but only six-tenths of a grain of ashes out of one hundred grains.

As with diabetes, so with obesity. A lady patient wrote to me: “I am nineteen years old. With a height of five feet and four inches I weigh one hundred and fifty-nine pounds. Despite of my taking exercise and my abstinence from fat-producing foods my weight continually increases.” Here we clearly see the insufficient chemical knowledge of our medical practitioners. They think that because sugar and fat can both be formed from starch those who have a tendency to obesity should avoid articles of food containing flour; but nothing is gained by this in cases of obesity, because also lean

meat can be transformed into fat, as may be seen in the formation of hams. The muscular fibres in hams diminish as the layer of fat increases. Now, if those who are morbidly obese confine themselves to a meat diet they give up just that part of the food which is indispensable for the formation of new red blood-disks; *i. e.*, lime which is contained in sufficient quantity in cereals raised on mountains but not in meat; for one hundred grains of beef; *e. g.*, contain only one and one-half grains of ashes, and these ashes consist for the most part of phosphate of potash. Where does the lime come in in this case? Without lime we can have no red blood-disks to absorb oxygen, and without these the fat that is accumulating cannot be respired away. The want of air and the distress in breathing with the obese prove that the red blood-disks which absorb oxygen and which need sulphur, lime and iron for their new formation are not present in sufficient number. This fundamental requirement should therefore first be provided for, then there need be no further anxiety about an accumulation of fat, for the fat will then, without any further trouble, be gradually breathed away provided there is no lack of bodily exercise. Also those inclined to obesity should eat physiological bread; but it had best be prepared, in their case, with five-sixths of an ounce of the physiological baking powder for every pound of wheaten flour. Then they will no more become puffed up, for the earthy constituents give to the whole of the human body its due form and consistency in the same way as they give this to the little building stones from which it is built up; namely, the red blood-disks. The obese as well as the diabetic patients should continue to use five-sixths of an ounce of the baking powder to one pound of flour until they are fully restored. Such bread corresponds to the ashy contents of almonds.

Wherever we look it is the ashy particles which give durability to plants. Therefore oaks and beech-trees grow to be one thousand years old while pines succumb to the bark-scarabs and wood-worms. Oaks and beech-trees have the advantage of having three per cent. of ashy parts while pines contain only one-fifth per cent.

The application to the increase in human blood of the power to resist chemical decomposition, disintegration, separation and corruption in proportion to the proper contents of earthy constituents is most manifest.

In consequence of the lack of lime in the blood in certain stages of diabetes the toes rot off; from lack of sulphur and lime in the blood the tissue of the lungs passes over into putrefaction; because of an almost total exhaustion of sulphur, lime, iron and salty constituents in the blood and in the lymph the contents of the lymphatic vessels and the tissue of the lymphatic glands with nomadic tribes that are badly nourished are subject, in the summer heat, to the filthy supuration of the plague sore.

Whoever wants to remain healthy and grow old, whoever desires to keep all his organs—the lungs, the liver, the stomach, the bowels, the kidneys and the bladder—in prosperous activity, ought to eat physiological bread, which contains all the earthy elements which are requisite to a healthy and vigorous circulation. He who, for example, has troubles with his evacuations, let him remember the efficacy of the pumpnickel (dark rye-bread), rich in earths, made of grain grown on mountain soil. And whoever desires to preserve his children from measles, scarlet fever, diphtheria and smallpox, from scrofula and glandular swellings, from worms and spasms, (see Hensel's "Our Diseases and our Remedies," pp. 4 and 5*) from anæmia, chlorosis and consumption, let him give them, as soon as they are weaned from their mother's breast or from their nursing-bottle, physiological bread, or soup made therefrom. But especially the women should not forget themselves, so that from a healthy, vigorous blood they may derive the ability of giving life to healthy children. Can there be a better midwife than the strength of their own bodies? Has not the Creator given us the earth as the universal mother and nourisher, and at the same time the vigorously circulating blood rich in earthy elements as the most primitive and salutary universal medicine? How far has the frittering away of our activity and of our studies driven us away from the original fountain of all knowledge—from nature. Instead of this unfailing instructress there have arisen an endless number of doctors of medicine, of theology and of laws; but they all make their pilgrimages to Carlsbad, to drink there water rich in earthy elements, and thus to get, from time to time at least, new, healthy blood into their arteries instead of the vitiated blood there circulating.

*Julius Hensel, Makrobiotik, "Our Diseases and Our Remedies." Cloth, price, \$1.50; by mail, \$1.60. Boericke & Tafel, 1011 Arch St., Philadelphia, Pa.

Man is incontestably created in part from the earth. From the earth we continually get for ourselves new strength, like giant Antæus. Without earthy elements no new creation, no regeneration of mankind that is sinking down bodily and morally is possible.

RECIPE.

Take of wheat flour, - - - - 3 pounds.
of physiological bread powder, - 1 ounce.

With sufficient compressed yeast which has been stirred up into a cupful of milk and with the necessary water make a dough, and bake, after rising, like any other bread.

Physiological bread with butter and some salted milk (one-half a teaspoonful of salt with a half pint of milk) are sufficient of themselves to furnish the body *all* that it needs in order to remain in full strength.*

The foregoing essay was published in the beginning of the year 1894, and the subject elucidated met with so much favor that at this time over twenty bakeries in various parts of Germany are regularly furnishing this "Physiological Bread." Also in Austria as well as in Switzerland it is being baked regularly. However, while the palatableness and a feeling of contentment after partaking of the physiological bread is fairly conceded from all sides, yet there was a general request that the matter be put into more convenient form and then its use be rendered more general.

Thereupon Julius Hensel supplemented his physiological baking powder by producing a *Hygienic Nerve and Tissue Food* which contains in a palatable and more soluble form all the constituents of the "Physiological Bread Powder," and which may be used by itself, or, better still, in connection with the "Physiological Bread."

Of this "*Hygienic Nerve and Tissue Food*" one gram (equal to half an even teaspoonful) should be taken three times a day, either in beef broth, or soup, or in half a cup full of milk

* N. B.—Trial packages of Hensel's physiological bread powder sufficient for mixing with nine pounds of bread, with directions for use, will be forwarded on receipt of thirty cents. Address Boericke & Tafel's Pharmacies.

or of hot water. It will be found to be quite palatable, resembling a light broth in taste. Even children of six years of age thrive and feel well on partaking of it regularly; for they need as much bodily sustenance as a grown person, for they are building up their body; any possible surplus not needed for the production of chyle is passed off in the natural way about in the same manner as a surplus of meat or potatoes would be if taken in excess of the needs of replacing the waste materials of the body.

A trial package sufficient for a two weeks' supply will be furnished for 35 cents, or a pound for \$2.50. Address the publishers of this pamphlet.

Physicians in Europe, and also to a large extent in this country, make use of the *Tinctura Tonica Hensel*, or "Hensel's Tonicum," as it is usually called, when desiring to administer iron. Hensel's Tonicum is an incomparably effective iron preparation and contains the iron as it is found in the blood—in the magnetic form, *i. e.*, the ferric and ferrous oxide combined with acetic and formic acid. It contains calcium in addition. Half a teaspoonful mixed with half a pint of sweetened water forms a refreshing, strengthening beverage of a splendid punch-like or vinous flavor, owing to some extent to the formic and acetic ether which it contains.

Hensel's Tonicum has made the tour of the world. In all parts of it it is partaken of as a refreshing beverage of the first rank. It is well known that in all febrile conditions meat, the chief and natural source of iron for the body, is interdicted, and it is self-evident that in such cases iron should be administered. Hensel's Tonicum in febrile conditions and in tropical climates is truly a beneficial beverage.

Hensel's Tonicum is no secret preparation, as for many years the inventor has minutely described its mode of preparation in his writings.

Price for twelve-ounce bottle, \$1.25.

For trial bottle of four ounces, 50 cents; do., by mail, 70 cents.

The praises and indispensability of the Physiological salts and earth have been so persistently set forth in this brochure that it behooves to add that it should be borne in mind that these preparations are far from being a panacea, rendering

other medication superfluous. That a prolonged course of these preparations merely forms a basis for all other indicated medication, in so far as a correct physiological nutrition increases our power of resistance to noxious influences and thus forms the only rational basis for a successful resistance to diseases.

Physiological salts cannot of course, prevent disease, neither can they absolutely protect against future attacks of sickness; no rational person will expect that; but their use builds up the constitution and gives a solid and sound basis for curative measures in case of disturbances such as we have not had heretofore to such an extent.

Julius Hensel's Physiological Preparations are by no means secret preparations, for all the constituents have repeatedly been made known to his readers in his various works. Boericke & Tafel have, however, taken up their preparation under his direct instructions in this country, and should the commercial preparations prove a disappointment to those employing them they should not definitely be cast aside before trying Boericke & Tafel's preparations, which are always prepared from purest materials in the most thorough manner.

All of Hensel's Preparations are kept in stock at Boericke & Tafel's Pharmacies, which are located as follows:

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BREAD FROM STONES. A New and Rational System of Land Fertilization and Physical Regeneration. Translated from the German. 135 pp. 16mo. Leatherette. Philadelphia: A. J. Tafel, 1894. Price, 25 cents, mailed postpaid on receipt of price.



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